

Remarks:

Claims 42-48 and 50-93 are now pending in this application. Applicants have amended claims 42-47, 69, 74, 78-88 and 92 and cancelled claim 49 to clarify the present invention. Applicants respectfully request favorable reconsideration of this application.

Applicants submitted an abstract of the disclosure on a separate sheet with the preliminary amendment. Accordingly, Applicants respectfully request withdrawal of the objection to the disclosure.

Applicants have amended claims 44 and 45 to clarify the that control member is the voltage control member. Applicants have amended claim 74 to clarify that it is Z_v that is being recited. Accordingly, Applicants respectfully request withdrawal of the objections to the claims.

The Examiner rejected claims 42-46, 48, 50, 58, 66-74, 77-80, 83-87, and 90-93 under 35 U.S.C. § 102(b) as being anticipated by U.S. patent 5,734,257 to Schauder et al. The Examiner rejected claim 82 under 35 U.S.C. § 103(a) as being unpatentable over Schauder et al. in view of U.S. patent 6,925,385 to Ghosh et al. The Examiner rejected claims 47, 75, and 88 under 35 U.S.C. § 103(a) as being unpatentable over Schauder et al. in view of U.S. patent 6,577,108 to Hubert et al. The Examiner rejected claims 49 and 60 under 35 U.S.C. § 103(a) as being unpatentable over Schauder et al. in view of U.S. patent 4,081,741 to Palmer. The Examiner rejected claims 51 and 52 under 35 U.S.C. § 103(a) as being unpatentable over Schauder et al. in view of U.S. patent 5,166,597 to Larsen et al. The Examiner rejected claims 53 and 54 under 35

U.S.C. § 103(a) as being unpatentable over Schauder et al. in view of U.S. patent 6,011,381 to Andrei. The Examiner rejected claims 55 and 57 under 35 U.S.C. § 103(a) as being unpatentable over Schauder et al. in view of U.S. patent publication 2004/0012472 to Sasse et al. The Examiner rejected claim 56 under 35 U.S.C. § 103(a) as being unpatentable over Schauder et al. in view of U.S. patent 4,591,963 to Retotar. The Examiner rejected claims 59 and 76 under 35 U.S.C. § 103(a) as being unpatentable over Schauder et al. in view of U.S. patent 4,075,675 to Buckett et al. The Examiner rejected claims 64, 65, and 89 under 35 U.S.C. § 103(a) as being unpatentable over Schauder et al. in view of Watson et al. The Examiner rejected claims 61-63 under 35 U.S.C. § 103(a) as being unpatentable over Schauder et al.

Schauder et al. does not disclose the invention recited in claims 42, 69, 83 or 92 since, among other things, Schauder et al. does not disclose at least one shunt connected transformer including a tap-changer. Rather, as discussed at col. 1, lines 49-60, Schauder et al. discloses a transmission line power controller arranged at one end of a transmission line that includes a series inverter that injects into the line through a series transformer an AC voltage with a controllable magnitude and phase angle. Additionally, the claimed invention only requires at least one shunt transformer at each end of a line. On the other hand, Schauder et al. requires a shunt transformer plus a series transformer. Therefore, Schauder et al. discloses a different structure than the present invention.

Additionally, Schauder et al. discloses continuously controlling voltage. On the other hand, the tap changer according to the claimed invention operates turn-by-turn to adjust the voltage stepwise.

Furthermore, the claimed invention includes a voltage control member that controls the transformers at each end of the AC transmission cable in a coordinated manner. In contrast, Schauder et al. does not disclose a second line end. Schauder et al. only discloses control of one power controller at one end of a line. Additionally, Schauder et al. does not disclose controlling transmission line voltage in dependence on a surge impedance of the AC transmission cable. Schauder et al. does not disclose how or on what basis the voltage is controlled.

The claimed invention controls a desired reactive power level in a much more simple and cost effective manner than the system disclosed by Schauder et al. The results at least in part because the system according to the claimed invention requires only one transformer at each end of an AC transmission cable, regulates the transformers at the ends of the transmission cable in a coordinated manner and only adjusts the magnitude of the line voltage in a discrete manner via a tap changer.

In view of the above, Schauder et al. does not disclose all elements of the present invention as recited in claims 42-46, 48, 50, 58, 66-74, 77-80, 83-87, and 90-93. Since Schauder et al. does not disclose all elements of the present invention as recited in claims 42-46, 48, 50, 58, 66-74, 77-80, 83-87, and 90-93, the present invention, as recited in claims 42-46, 48, 50, 58, 66-74, 77-80, 83-87, and 90-93, is not properly rejected under 35 U.S.C. § 102(b). For an anticipation rejection under 35 U.S.C. § 102(b) no difference may exist between the claimed invention and the reference disclosure. *See Scripps Clinic and Research Foundation v. Genentech, Inc.*, 18 U.S.P.Q. 841 (C.A.F.C. 1984).

Along these lines, anticipation requires the disclosure, in a cited reference, of each and every recitation, as set forth in the claims. *See Hodosh v. Block Drug Co.*, 229 U.S.P.Q. 182 (Fed. Cir. 1986); *Titanium Metals Corp. v. Banner*, 227 U.S.P.Q. 773 (Fed. Cir. 1985); *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 1 U.S.P.Q.2d 1081 (Fed. Cir. 1986); and *Akzo N.V. v. U.S. International Trade Commissioner*, 1 U.S.P.Q.2d 1081 (Fed. Cir. 1986).

The combination of Schauder et al. and Ghosh et al., Hubert et al., Palmer, Larsen et al., Andrei, Sasse et al., Retotar, Buckett et al., or Watson et al. does not suggest the invention recited in any of claims 47, 49, 51-57, 59, 60-65, 75, 76, 82, 88, or 89 since, among other things, none of the secondary references suggests at least one shunt connected transformer including a tap-changer, only at least one shunt transformer at each end of a line, adjusting voltage in a stepwise manner, controlling the transformers at each end of an AC transmission cable in a coordinated manner, or controlling transmission line voltage in dependence on a surge impedance of the AC transmission cable. Therefore, none of the combinations of references suggests the invention recited in claims 47, 49, 51-57, 59, 60-65, 75, 76, 82, 88, or 89, which depend from one of independent claims 42, 69, 83, or 92. Accordingly, the cited combinations of references do not suggest the invention recited in claims 47, 49, 51-57, 59, 60-65, 75, 76, 82, 88, or 89.

In view of the above, the references relied upon in the office action, whether considered alone or in combination, do not disclose or suggest patentable features of the claimed invention. Therefore, the references relied upon in the office action, whether considered alone or in

combination, do not anticipate the present invention or make the claimed invention obvious. Accordingly, Applicants submit that the claimed invention is patentable over the cited references.

If an interview would advance the prosecution of this application, Applicants respectfully urge the Examiner to contact the undersigned at the telephone number listed below.

The undersigned authorizes the Commissioner to charge insufficient fees and credit overpayment associated with this communication to Deposit Account No. 22-0261.

Respectfully submitted,

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